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Approved For Release 2002/09/04 : CIA-RDP68B00724R000100020001-8

CENTRAL INTELLIGENCE AGENCY

NRO REVIEW COMPLETED

WASHINGTON 25, D. C.

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Copy 12 of 12

25X1

MEMORANDUM FOR : Director, National Reconnaissance Office

SUBJECT : ISINGLASS Research and Development Program

1. Pursuant to your verbal request, I have attached to this memorandum a recommended research and development program for ISINGLASS covering a period of about nine months. This program has been designed specifically with two goals in mind:

a. to determine capability to satisfy our objectives, in particular, to establish system capabilities with regard to resolution, survivability, range, reaction time, tactical flexibility, and target coverage; and

b. to establish reliable program cost estimates based on detailed point design, subsystem analysis, and, insofar as possible, actual manufacturing experience. In order to accomplish the above, a substantial amount of testing, engineering and analysis will be necessary which will further confirm the technical feasibility of the concept.

25X1

3. The basic study areas at McDonnell are:

a. System Effectiveness: This will include development of a mission performance computer program and analysis of targeting, reaction time, basing recovery, and support operations. In addition, necessary contractor support to government studies on survivability and cost effectiveness will be provided.

b. Configuration Definition: Using extensive wind tunnel testing, full flight range performance of the aircraft and carrier aircraft will be established and design sensitivities assessed. In addition, extensive

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2100-66

testing will be done to establish the photographic performance, to demonstrate the window cavity concept, and to optimize design. Structural elements will be determined, their performance substantiated and refurbishment requirements established.

c. Technology Demonstration: From wind tunnel tests, thermal design criteria will be established and structural elements, including the insulation and water-wick, will be subjected to thermal tests. A full scale fuselage section will be designed and the performance of the cryogenic systems will be demonstrated.

d. Cost and Schedule Substantiation: The results of the work above will be used to develop a high confidence base for cost and schedule performance.

4. In addition to the work at McDonnell Aircraft Corp. we are recommending certain studies to establish camera environment. These studies will investigate the internal turbulence of the camera bay, window temperature gradients, and boundary layer effects. Details are set forth in the attachment. Total cost, over a period of 9 months, would be

5. If, on conclusion of the foregoing program, it appears desirable to continue work on this project, we would propose a second phase. In particular, we feel that a full scale fuselage section and window cavity should be constructed. This will permit us to verify weight factors, harden cost data, and determine capability to achieve resolution requirements. We are in the process of preparing this second phase program to last about nine months and cost

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[Redacted]
Director of Reconnaissance, CIA

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2100-66

Attachment - 1
as noted above

Signature Recommended:

(Signed) Jack C. Ledford

Director of Special Activities

APD/OSA [] (7 Feb 66)

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25X1



2100-66

25X1

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INDEX TO ATTACHMENT TO



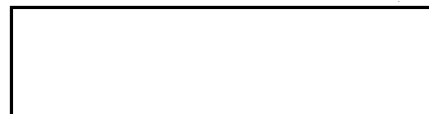
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A. McDonnell Aircraft Corporation

1. System Effectiveness
2. Configuration Definition
3. Technology Demonstration
4. Cost and Schedule Substantiation
5. Reviews and Documentation
6. Program Schedule
with accompanying key

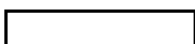
B. Camera Studies

1. Internal Turbulence
2. Window Gradient Tests and
Boundary Layer Effects



25X1

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